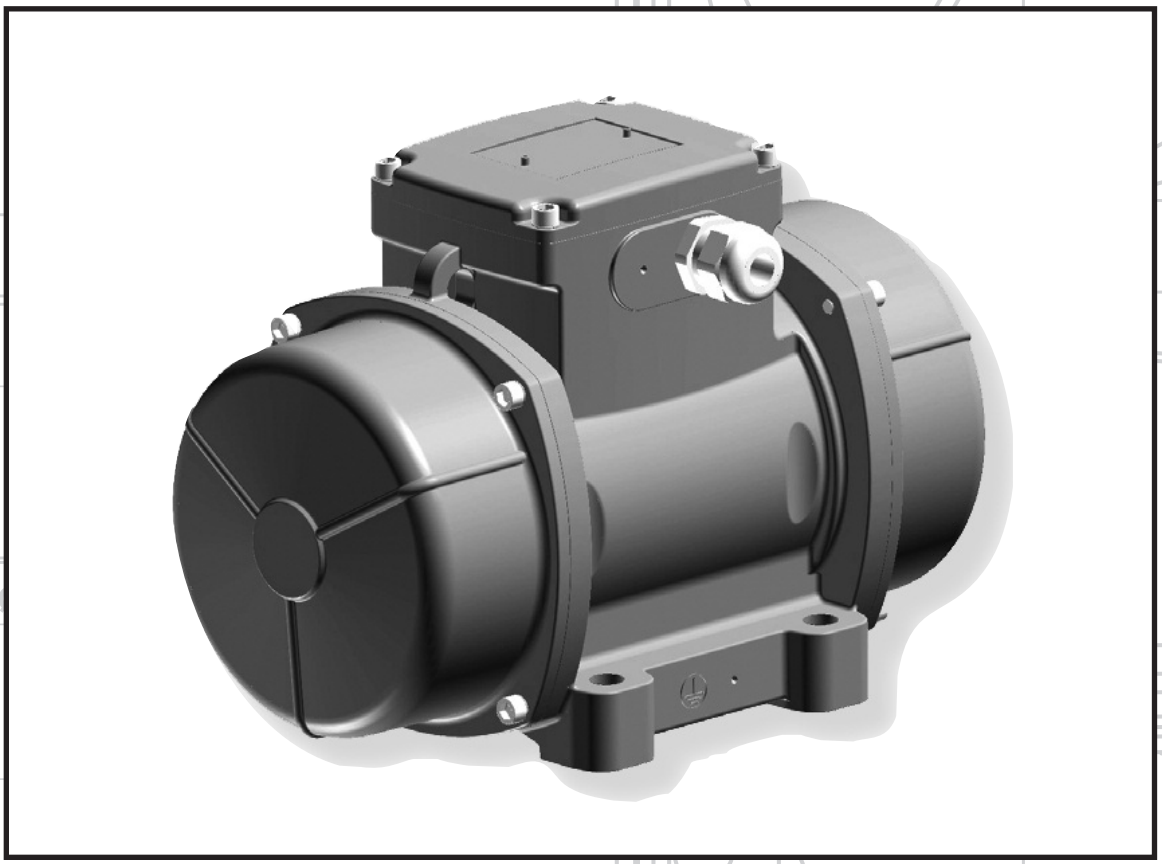
Italvibras USA

Industrial Electric Vibrators



Model MVSI

Operator's Manual

italvibras
g.silingardi
USA

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Introduction

Italvibras USA industrial electric vibrators have been designed and manufactured in accordance with the most exacting international industrial standards and requirements. Italvibras USA industrial electric vibrators are designed for long life at continuous duty and maximum force output. The electric vibrators are suitable for operation in ambient from -30°C to 40°C (operation outside of this range needs engineering consideration).

Italvibras USA industrial electric vibrators have been evaluated for installation throughout the world. Standard ratings include CSA (Canadian Standards Association) Approval, the CE (European Directive) Mark, EX Approval for Zone 21 (ATEX II2D tD A21 IP66), Russian GOST Mark and IECEx Approval (II2D tD A21 IP66). Check the electric vibrator nameplate for the exact ratings and Approvals for the specific Model.

The electric vibrator can be referred to by its Model or Type designation or by its Item number. The vibrator Model or Type designations referred to in this manual are as follows:

MVSI – Continuous duty industrial electric vibrator, single or three phase.

The electric vibrator may optionally be CSA Approved for Class I, Division 2, Group A, B, C and D hazardous locations, or it may be marked as being suitable for Class II, Division 2, Group F and G hazardous locations. Applications and installations requiring Division 1 equipment shall use Italvibras' CDX explosion-proof and dust-ignition-proof industrial electric vibrators.

General Safety requirements

Read this entire manual before proceeding. Compliance with all company, local and OSHA regulations is essential. Any electrical work must be done in accordance with all applicable local and national codes and must be performed only by qualified, licensed and authorized personnel. Always follow lockout and tag out procedures and requirements and always wear ear protection when in close proximity to operating vibratory equipment.
Comprehensive adherence to these documents at a minimum is required – The National Electrical Code NFPA 70, ANSI z244.1 the American National Standard for Personnel Protection – Lockout/Tag out of Energy Sources – Minimum Safety Requirements, CFR 29 Part 1910 – Control of Hazardous Energy Sources (Lockout/Tag out) Final Rule and CFR 29 Part 1910.15 Occupational Noise Exposure.

Storage

Storage of the electric vibrator should be in an ambient not less than 5°C with a relative humidity not more than 60%. If the vibrator has been stored for longer than two years, the vibrator should be evaluated by authorized and trained personnel to ensure that the grease is intact, that there is no bearing damage such as brinelling and that the ground insulation is sound and not damaged from condensation.

Installation

Before installing the vibrator, make sure that you have everything that you will need and that there is no shipping damage. Any product damage should be reported to the delivery service immediately. Standard metric hand tools will be needed. Carefully handle the electric vibrator. Dropping or impacting the electric vibrator may damage the bearings.

Welding – Never weld on a bin, hopper or machine with the electric vibrator mounted to it since the welding may damage the vibrator bearings or electrical circuits. When you do weld, especially in an enclosed area, make sure that the area is known to be nonhazardous and that there are no flammable or explosive levels of gases, vapors or dusts.

Mounting Surface – The object of vibration on bins and hoppers is to transmit vibration energy through the structure to the material within. The mounting surface must be rigid and strong for this transfer of energy to take place. The mounting surface must also be clean, flat (0.010 in. across mounting feet maximum), free of paint and have a minimum thickness equal to the major diameter of the mounting bolt. Also make sure that the electric vibrator feet are clean and free of debris.

Mounting Plate

The mounting plate should be at least the overall size of the electric vibrator feet. It should be located on the bin and hopper wall at a height of ¼ to 1/3 of the sloped wall height. The mounting plate or bracket should extend at least ¾ the length of the sloped wall. Reference Figure 1. If a second electric vibrator is to be installed to the bin or hopper, install it at a height of ½ of the sloped wall height and 180° from the first vibrator. Weld the mounting plate or bracket to the structure wall with skip welds that are 3 in. long then skip 2 in. then 3 in. long weld, etc. Do not weld at corners of mounting plate within 1 in. of the corner.

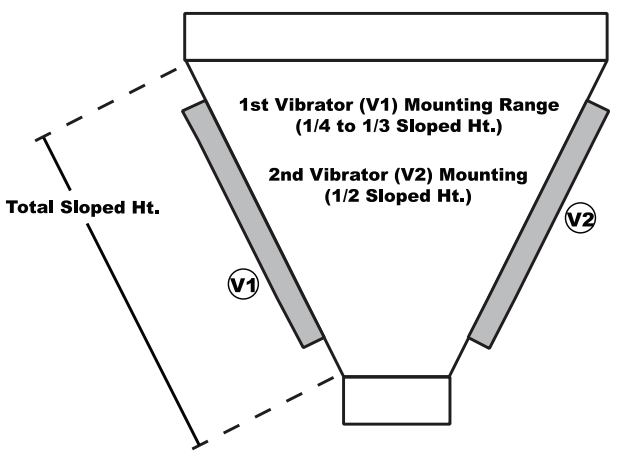


Figure 1. Mounting Examples

Safety Cable

Always install a safety cable metal rope from the electric vibrator to a reliable support should the vibrator become free from its mount and fall more than 6 in. The metal rope should be taut and positioned above the electric vibrator. Reference Figure 2.

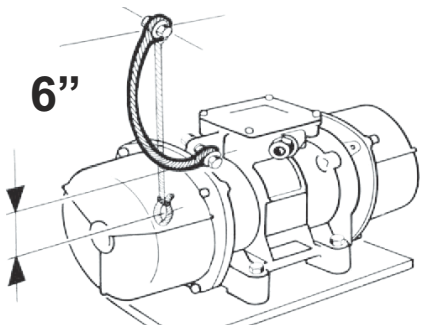


Figure 2. Safety Cable Installation

Mounting Kits

Mounting kits are available from Italvibras USA for frame sizes 00, 01, 10, 20, 30, 40 and 50. The mounting kits include a channel mount with integral mounting plate, mounting screws and washers and safety cable kit. Contact Italvibras USA by phone at 815-872-1350.

Mounting Hardware & Torque

Always use new bolts, nuts and compression washers. The bolts should be Grade 5 or 8 (equivalent international designation is 8.8 and 12.9, respectively). Grade 5 bolts are suitable for a majority of applications. Do not use split lock washers. Use only compression washers. Table I offers suggested mounting bolt torque values. Always check with the bolt manufacturer for recommended torque values. Torque the mounting bolts in the proper sequence as shown in figure 3 so as not to damage casting. After operating vibrator for 15 minutes, disconnect, lockout/tag out, and torque the mounting bolts a second time. Periodically check the mounting bolt torque thereafter.

Table I. Mounting Bolts & Torque Requirements

	British		Metric	
Frame Size	**Bolt Size**	**Dry Torque Grade 5**	**Bolt Size**	**Dry Torque Grade 8.8**
00, 01	5/16 in-18 NC	16.5	M8	2.3
10, 20	1/2 in-13 NC	58	M12	8
30, 33, 35 ,40, 50	5/8 in-11 NC	137	M16	19
60	3/4 in -10 NC	288	M20	38
70	7/8 in -9 NC	430	M24	71
80	1 in-8 NC	645	M24	71
90, 95	1 in-8 NC	645	M27	89
97	1-3/8 in-8 NC	1370	M36	190
100, 105, 110	1-5/8 in-8 NC	2090	M42	290

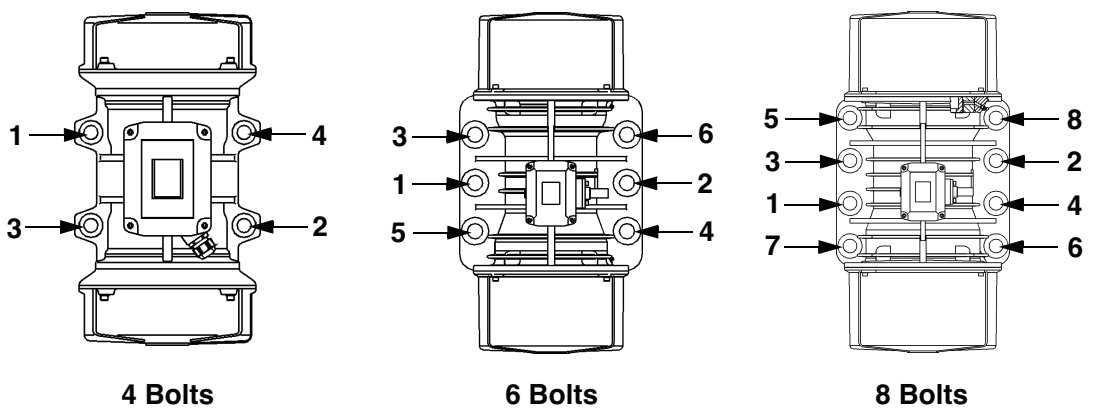


Figure 3. Torque Sequence

Wiring Electric Vibrator

It is mandatory to comply with the National Electrical Code, NFPA 70, and all applicable local codes. Identify which wiring diagram is applicable by referencing the Diagram designation on the nameplate or by referring to Table II. Remove the four screws with washers securing the wiring box cover along with the foam rubber block and set aside. Identify the wiring diagram by referencing the predetermined Diagram noted on the wiring diagram found within the wiring box or by referring to the Diagrams shown in Figure 4.

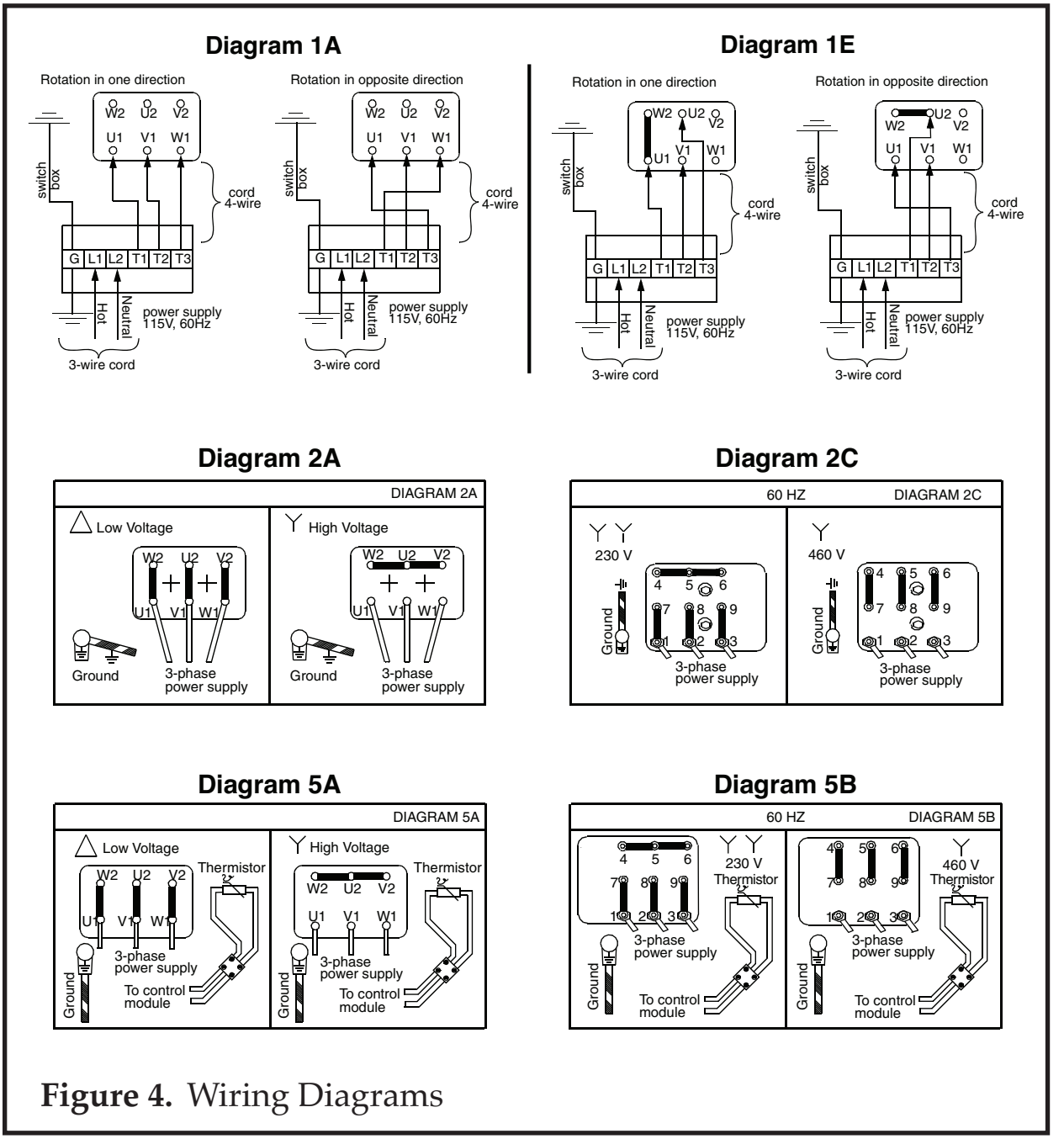


Figure 4. Wiring Diagrams

Wiring Electric Vibrator Cont.

Table II. Wiring Diagram Identification

00 through 01, single-phase, 3600 rpm	Diagram 1A
10 through 30, single phase, 3600 rpm	Diagram 1E
00 through 60, three-phase,1200,1800 & 3600 rpm; MVSI 9-590; & 575-volt 900 rpm	Diagram 2A
40 through 60, three-phase, 900 rpm except 575V	Diagram 2C
70 through 110, three-phase, 1200, 1800 & 3600 rpm; & 575V 900 rpm	Diagram 5A
70 through 110, three-phase, 900 rpm except 575V	Diagram 5B

Select a cord type that has a voltage rating not less than the power supply voltage, that has a minimum temperature rating of 105°C, and that has an overall jacket diameter within the range specified in Table III. This table also details the cord provided by the factory for reference. We recommend Coleman black portable cord SEOOW Seoprene rated 600 V and 105°C. Coleman Cable Inc. can be reached by phone at 847-672-2300 or at www.colemancable.com. Italvibras USA also stocks the Coleman cable.

Table III. Cord Grip Chart

Frame Size	Size mm x 1.5	Item No.	Suitable Cord Diameter Range, mm	Cord Provided By Factory		
				Size	Nominal Diameter, in.	Distance Between Flats, in.
00, 01, 10	M20	511596	6.5-12	16/4	0.42	1/16 to 1/8
20-70	M25	511597	9-16	14/4	0.575	1/16 to 1/8
80-95	M32	511598	13-21	10/4	0.705	1/16 to 1/8
97-110	M32	511598	13-21	8/4	0.807	3/32 to 5/32
Thermistor Circuit Cord	M20	511596	6.5-12	16/3	0.39	1/16 to 1/8

When wiring the electric vibrator, leave enough slack in the cord so that the cord does not become taut during operation causing stress on the connections. It is always best to position the cord down so that should there be any moisture present the moisture would tend to run down instead of into the vibrator wiring box.

Trim the cord by removing the jacket exposing the conductors and ground wire for approx. 6 in. Be careful not to cut the conductor or ground wire insulation. Loosen the compression nut from the cord fitting assembled to the side wall of the wiring box on the electric vibrator. Position the compression nut on the cord and insert the cord through the opening in the side wall of the wiring compartment. Position the jacket of the cord approx. ½ in beyond the inside wall of the wiring box wall and secure the compression nut by threading it to a position equal to the "Distance Between Flats" noted in Table III. Reference figure 5. which pictorially defines "Distance Between Flats"

Wiring Electric Vibrator Cont.

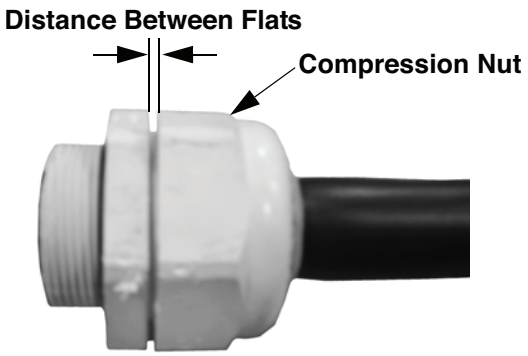


Figure 5. Distance Between Flats

Trim the conductors within the wiring box leaving plenty of slack. Next, strip the conductor insulation for 1/4 in. to 3/8 in. Crimp on closed loop wire connectors. Use only the intended crimping tool as designated by the wire connector manufacturer. The conductors should be neatly arranged on the floor of the wiring box. The wires should not cross over each other. See figure 6.

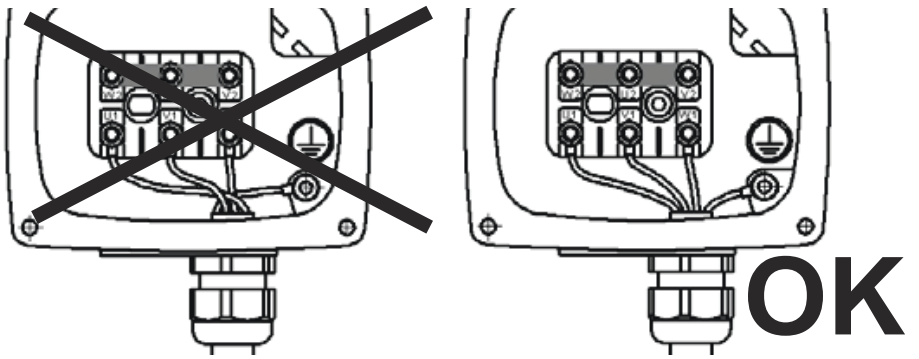


Figure 6. Proper Wiring Arrangement/Positioning

Secure the wire connectors and the shorting bars to the terminal block in the positions shown on the wiring diagram using the hardware provided. It is essential that the hardware be positioned as shown in Figure 7.

Note that the closed loop wire connectors provided on the power supply cord are positioned between the two flat washers. A drop or two of thread sealant such as Locktite is recommended. Do not use permanent thread sealant because the terminal block will be damaged should you wish to remove and replace the power supply cord. The terminal block nuts should not be over tightened since the possibility of damaging the plastic insulating body is high. Reference table VI in the Appendix for torque values. Make the connections hand-tight followed by a ¼ turn but never put a ratchet on these nuts.

Wiring Electric Vibrator Cont.

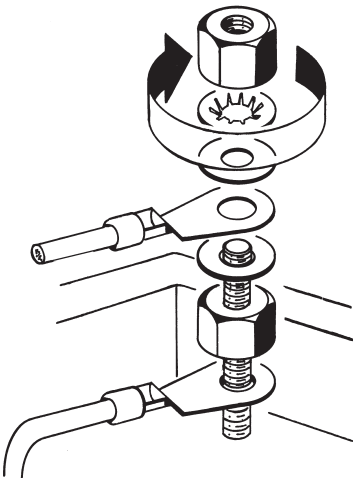


Figure 7. Terminal Block Hardware Installation

For wiring diagrams 1A, 1E, 2A and 2C (Fig.4), reinstall the rubber block over the power supply conductors and install the wiring box cover being careful not to pinch the O-ring. Screw torque is specified in the Appendix. See figure 8.

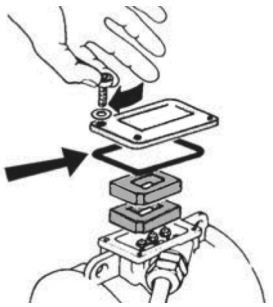


Figure 8. Wiring Block Assembly

For wiring diagrams 5A and 5B, you will note that there is a small 2-pole terminal block in the wiring box. This is the thermistor circuit. Proceed to Thermistor Wiring.

Thermistor Wiring

Electric vibrators with Diagram 5A and 5B have thermistor circuits installed in the winding. These devices are intended to protect the winding from over-temperature. Connect the thermistors to the motor starter using a thermistor control module such as Siemens 3RN1012-1CK00. Never apply line voltage to the thermistor circuit. It is a low voltage +/- 5V dc circuit. The thermistor control module is connected to the motor starter control circuit which commonly operates at 120 Vac. Follow the wiring diagram provided with the thermistor control module.

The thermistors are our Item No. 0539503 and are rated 130°C. There are three PTC thermistors wired in series that are installed in the vibrator winding and connected to blue or grey leads. These leads are secured to the small 2-pole terminal block mounted in the wiring box.

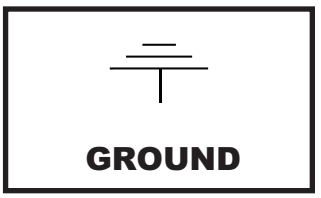
To assemble the thermistor cord, remove the threaded metal plug assembled in the side wall of the wiring box and install a M20 cord grip (our Item No. 0511596). Select a cord type that has a voltage rating not less than the power supply voltage, that has a minimum temperature rating of 105°C, and that has an overall jacket diameter within the range specified in Table III. This table also details the cord provided by the factory for reference. We recommend Coleman black portable cord SEOOW Seoprene rated 600 V and 105°C. Coleman Cable Inc. can be reached by phone at 847-672-2300 or at www.colemancable.com. Italvibras USA also stocks the Coleman cable.

Trim the cord by removing the jacket exposing the conductors for approx. 6 in. Be careful not to cut the conductor wire insulation. Loosen the compression nut from the cord fitting assembled to the side wall of the wiring box on the electric vibrator. Position the compression nut on the cord and insert the cord through the opening in the side wall of the wiring compartment. Position the jacket of the cord approx. ½ in beyond the inside wall of the wiring box wall and secure the compression nut by threading it to a position equal to the "Distance Between Flats" noted in Table III. Reference figure 5 which pictorially defines "Distance Between Flats".

Trim the conductors within the wiring box leaving plenty of slack. Next, strip the conductor insulation for ¼ in. to 3/8 in. The conductors should be neatly arranged on the floor of the wiring box. The wires should not cross over each other. Secure the wires to the 2-pole terminal block by tightening the compression screws. Reinstall the rubber block over the power supply and thermistor circuit conductors and install the wiring box cover being careful not to pinch the O-ring. Screw torque is specified in the Appendix. Reference figure 8.

Grounding & Bonding

The electric vibrator must be grounded using the ground wire provided in the cord. The ground wire shall be connected to a closed loop wire connector which is then connected to the ground terminal located within the wiring box (See figure 6). The ground terminal is identified by the international symbol.



It may be necessary to bond the electric vibrator to ground using the external ground screw as shown in figure 9. The external ground terminal is identified by the international symbol. Use a wire size no smaller than the internal ground wire.

Grounding & Bonding Cont.

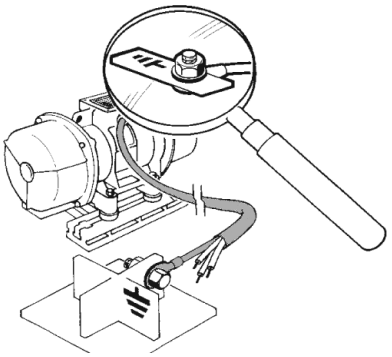


Figure 9. Ground Bonding Screw

Overload, Short-Circuit & Ground-Fault Protection

In the USA, The National Electrical Code, NFPA 70, and all applicable local codes, govern how to properly size, select and install overload protection (sometimes called heaters) and short-circuit and ground-fault protection (fuses or circuit breakers). Proper selection and installation of these devices is required and essential for not only protection of the electric vibrator and the power supply circuit but also for protection of personnel.

If the overload or short-circuit and ground fault protection operate, have qualified personnel locate and fix the problem before resetting.

When operating two electric vibrators, the vibrators should be controlled with a single motor starter that has overload protection dedicated to each electric vibrator. The overloads shall be electrically interlocked such that should there be a fault with one electric vibrator, both electric vibrators will be de-energized.

Variable Frequency Inverter

The electric vibrators may be supplied with a variable frequency inverter. Never operate the vibrators above the maximum frequency noted on the nameplate. If operating two vibrators, use one variable frequency inverter along with overload protection dedicated to each electric vibrator. The overloads shall be electrically interlocked such that should there be a fault with one electric vibrator, both electric vibrators will be de-energized.

The nameplate current should never be exceeded throughout the entire frequency range.

Eccentric Weight Adjustment

The eccentric weights may be adjusted to produce the desired centrifugal force output. It is always best to operate the electric vibrator at the lowest weight setting that produces the desired result. This will result in lower energy expense and extend the bearing life. The factory setting is 50% which would result in 50% of the centrifugal force noted on the nameplate. To adjust the force output, lockout/tag out the electric vibrator. Remove each weight cover and set it and the screws, washers and O-rings aside. The outer adjustable weight clamping screw or the shaft nut may be loosened and then the adjustable weights may be rotated to the desired position. Reference Figure 10.

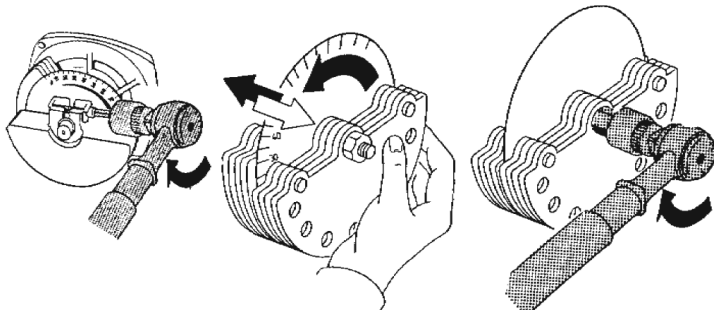


Figure 10. Eccentric Weight Adjust.

The eccentric weights must be adjusted to mirror images of each other at the same setting number as shown in Figure 11.

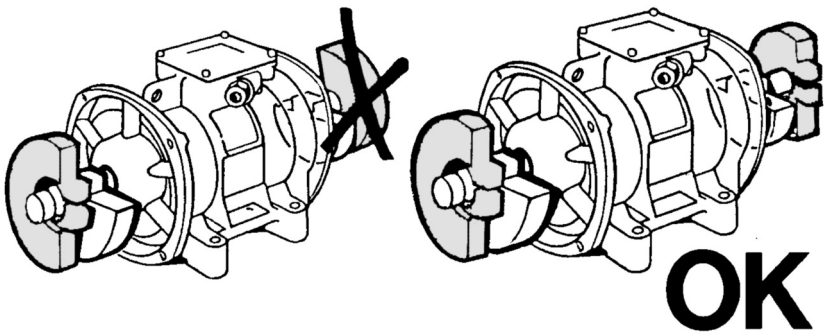


Figure 11. Setting Sets of Eccentric Weights to Mirror Images

Properly torque the clamping screw or shaft nut to secure the weights in position. Torque values are outlined in the Appendix. Reinstall the weight covers making sure not to pinch the O-rings.

Eccentric Weight Adjustment Cont.

Check shaft rotation before replacing weight covers. Start vibrator for 1 second, stop and lockout/tag out. Observe direction of rotation. If desired to reverse the direction of rotation, switch two of the three power supply leads in the wiring box or at the motor starter for 3-phase electric vibrators. For 1-phase electric vibrators, refer to the wiring diagram for changing the direction of shaft rotation.

Replace weight covers using screws and washers being careful not to pinch the O-rings. The screw torque is outlined in the Appendix. Never operate the electric vibrator without weight covers in place. They provide a degree of protection for the bearings and a shield for the rotating eccentric weights. Always replace broken weight covers immediately. Do not operate electric vibrator with weight covers removed or with damaged weight covers.

Starting Up

After making sure that the power supply voltage matches the voltage marked on the nameplate, that the mounting bolts are properly secured, that all covers are in place and secured, and that the motor starter is properly installed and adjusted, turn the electric vibrator on. Excessive noise would indicate a problem but slight bearing noise is normal due to the type of bearing used. After a few hours of operation, check each line current and verify that it does not exceed nameplate current. If the line current exceeds the nameplate current, then the mount needs to stiffened, the vibrator weights need to be reduced or the vibrator needs to be moved to a more rigid location. Never operate the vibrator above nameplate current.

After the first 8 hours of operation, check the line current to make sure that it does not exceed nameplate and check mounting bolt torque. See MOUNTING HARDWARE AND TORQUE.

Electric Vibrator Lubrication

All electric vibrators are lubricated at the factory. If there are no external grease fittings, then the vibrator construction is lubricated for life. No grease ever need be added to these electric vibrators. If external grease fittings are provided, then it is intended that the bearings be periodically lubricated. The lubrication schedule is outlined in Table IV.

Table IV. Lubrication Schedule For Each Bearing

Lubricate every 2000 hours unless specified otherwise.

00 Frame		01 Frame		10 Frame		20 Frame		30 Frame		33 Frame	
Model	**Grease, g**	**Model**	**Grease, g**	**Model**	**Grease, g**	**Model**	**Grease, g**	**Model**	**Grease, g**	**Model**	**Grease, g**
MVSI 36-380	Life	MVSI 36-480	Life	MVSI 36-660	Life	MVSI 36-1050	Life	MVSI 36-1680	Life	MVSI 36-2900	Life
MVSI 18-100	Life	MVSI 18-180	Life	MVSI 18-480	Life	MVSI 36-1500	Life	MVSI 18-1690	Life	MVSI 36-3500	9
		MVSI 18-250	Life	MVSI 12-110	Life	MVSI 18-920	Life	MVSI 18-2280	Life		
				MVSI 12-300	Life	MVSI 18-1310	Life	MVSI 12-760	Life		
						MVSI 12-580	Life	MVSI 9-590	Life		
						MVSI 9-340	Life				

35 Frame		40 Frame		50 Frame		60 Frame		70 Frame		80 Frame	
Model	**Grease, g**	**Model**	**Grease, g**	**Model**	**Grease, g**	**Model**	**Grease, g**	**Model**	**Grease, g**	**Model**	**Grease, g**
MVSI 36-2530	7	MVSI 18-3190	9	MVSI 36-3280	9	MVSI 13-5380	19	MVSI 36-6860	26	MVSI 18-10900	40
MVSI 18-2150	7	MVSI 12-1990	Life	MVSI 36-4080	Life	MVSI 18-6850	19	MVSI 36-8240	26	MVSI 18-13400	40
MVSI 12-1630	Life	MVSI 9-1440	Life	MVSI 36-4100	16	MVSI 12-3410	Life	MVSI 36-11000	30*	MVSI 12-8450	30
MVSI 12-1660	Life			MVSI 36-4910	16	MVSI 12-4700	Life	MVSI 18-8300	26	MVSI 12-10400	40
MVSI 9-910	Life			MVSI 18-3870	16	MVSI 9-2920	Life	MVSI 18-9420	26	MVSI 12-11400	40
MVSI 9-1160	Life			MVSI 18-4500	16	MVSI 9-3850	Life	MVSI 12-6050	18	MVSI 9-6830	30
				MVSI 12-2540	Life			MVSI 12-6600	18	MVSI 9-8400	40
				MVSI 12-3110	Life			MVSI 9-4640	18		
				MVSI 9-2030	Life						

*** - Lubricate Every 750 Hours**

**** - Lubricate Every 200 Hours**

Table IV. Lubrication Schedule For Each Bearing Cont.

Lubricate every 2000 hours unless specified otherwise.

90 Frame		95 Frame		97 Frame		100 Frame		105 Frame		110 Frame	
Model	**Grease, g**	**Model**	**Grease, g**	**Model**	**Grease, g**	**Model**	**Grease, g**	**Model**	**Grease, g**	**Model**	**Grease, g**
MVSI 36-14000	20**	MVSI 36-20000	25**	MVSI 18-19700	90	MVSI 18-25300	130	MVSI 12-31000	150	MVSI 12-45000	220
MVSI 18-14500	60	MVSI 18-17600	80	MVSI 12-14500	60	MVSI 18-32900	150	MVSI 12-37000	180	MVSI 12-55000	TBD
MVSI 12-11700	50	MVSI 12-17600	80	MVSI 12-20100	90	MVSI 12-26500	130	MVSI 12-40000	180	MVSI 9-49000	220
MVSI 12-12300	50	MVSI 12-19100	80	MVSI 12-24400	90	MVSI 9-24800	130	MVSI 9-31000	150	MVSI 9-57000	TBD
MVSI 12-14400	60	MVSI 9-14400	80	MVSI 12-29000	130			MVSI 9-38000	180		
MVSI 12-15400	60			MVSI 9-14500	60						
MVSI 9-9310	50			MVSI 9-21900	90						
MVSI 9-11700	60										

120 Frame	
Model	**Grease, g**
MVSI 12-67000	260
MVSI 9-67100	260

*** - Lubricate Every 750 Hours**
**** - Lubricate Every 200 Hours**

The lubrication frequency is every 2000 hours of operation unless specified otherwise in the table. There is an exception - 3600 rpm electric vibrators operating continuously or for long periods of time should be lubricated in ½ the time specified using ½ the grease volume specified. For all other vibrators, follow the table except when the operating temperature exceeds 90°C. If the operating temperature exceeds 90°C, reduce the lubrication frequency and lubrication volume by 50% for every 10°C increment above 90°C. If the electric vibrator operating temperature exceeds 100°C, contact Italvibras USA by phone at 815-872-1350. The electric vibrator should never operate above 120°C.

When adding grease through the grease fitting, make sure to clean the fitting so as not to introduce dirt into the bearing. Add the specified amount of grease. Experiment with your grease gun to determine how many grams are introduced with each pump. Never over-grease a bearing since this will damage the bearing and cause high operating temperature.

Always use the correct grease. Never mix greases. Use Kluber NBU 15 grease in all MVSI 36 electric vibrators. All other electric vibrators are lubricated with Kluber NBU 8EP grease. Kluber grease may be purchased direct from Kluber Lubrication by calling 800-447-2238. Italvibras USA also stocks the Kluber grease.

Electric Vibrator Repair

If the electric vibrator needs repair, contact Italvibras USA at 815-872-1350 for instructions. Most electric motor repair shops are not trained to repair our industrial electric vibrators. We recommend that they be returned to the service center located in Princeton, IL. Attempting to repair the electric vibrator or replace the bearings will void the warranty.

Electric Vibrator Maintenance

Every quarter, we recommend a thorough inspection of the electric vibrator. After lockout/tag out, do the following:

1.) Inspect the cord for any visible damage or wear. Replace the cord if there are any signs of damage or wear. This holds true for both the power supply cord and the thermistor circuit cord.

2.) Remove the wiring box cover and inspect for any foreign matter or liquid. Vacuum any foreign matter. If wet, remove electric vibrator from service and have the ground insulation tested by a trained, qualified and licensed technician.

3.) Before replacing the wiring box cover, make sure the electrical connections are tight (do not over-tighten) and inspect the cover O-ring and rubber compression block. If the O-ring or rubber compression block is damaged or if they have lost their compression set, replace them.

4.) Remove each weight cover and inspect for foreign matter. Vacuum if necessary. Replace O-rings if they are damaged or if they have lost their compression set.

5.) Check the mounting bolt torque.

6.) Replace any broken parts.

Appendix

Electric Vibrator Item Numbers

The table below outlines a list of electric vibrator Model/Type designations next to their respective Item No. The information is sorted by frame size. Please reference the Model/Type designation and Item No. when ordering electric vibrators or their parts.

Table V. Vibrator Item Numbers By Frame

00 Frame		01 Frame		10 Frame		20 Frame		30 Frame		33 Frame	
Model	**Item No.**	**Model**	**Item No.**	**Model**	**Item No.**	**Model**	**Item No.**	**Model**	**Item No.**	**Model**	**Item No.**
MVSI 36-380	600311	MVSI 36-480	600312	MVSI 36-660	600313	MVSI 36-1050	600314	MVSI 36-1680	600381	MVSI 36-2900	600491
MVSI 18-100	601340	MVSI 18-180	601341	MVSI 18-480	601367	MVSI 36-1500	600366	MVSI 18-1690	601408	MVSI 36-3500	600504
		MVSI 18-250	601366	MVSI 12-110	602296	MVSI 18-920	601372	MVSI 18-2280	601513		
				MVSI 12-300	602297	MVSI 18-1310	601373	MVSI 12-760	602314		
						MVSI 12-580	602298	MVSI 9-590	602575		
						MVSI 9-340	602568				

35 Frame		40 Frame		50 Frame		60 Frame		70 Frame		80 Frame	
Model	**Item No.**	**Model**	**Item No.**	**Model**	**Item No.**	**Model**	**Item No.**	**Model**	**Item No.**	**Model**	**Item No.**
MVSI 36-2530	600513	MVSI 18-3190	601217	MVSI 36-3280	600502	MVSI 13-5380	601220	MVSI 36-6860	600470	MVSI 18-10900	601211
MVSI 18-2150	601524	MVSI 12-1990	602380	MVSI 36-4080	600503	MVSI 18-6850	601268	MVSI 36-8240	600471	MVSI 18-13400	601447
MVSI 12-1630	602402	MVSI 9-1440	602609	MVSI 36-4100	600256	MVSI 12-3410	602406	MVSI 36-11000	600472	MVSI 12-8450	602154
MVSI 12-1660	602403			MVSI 36-4910	600257	MVSI 12-4700	602407	MVSI 18-8300	601221	MVSI 12-10400	602204
MVSI 9-910	602615			MVSI 18-3870	601219	MVSI 9-2920	602618	MVSI 18-9420	601269	MVSI 12-11400	602350
MVSI 9-1160	602616			MVSI 18-4500	601267	MVSI 9-3850	602619	MVSI 12-6050	602167	MVSI 9-6830	602884
				MVSI 12-2540	602381			MVSI 12-6600	602230	MVSI 9-8400	602515
				MVSI 12-3110	602382			MVSI 9-4640	602891		
				MVSI 9-2030	602610						

Electric Vibrator Item Numbers Cont.

Table V. Vibrator Item Numbers By Frame Cont.

90 Frame		95 Frame		97 Frame		100 Frame		105 Frame		110 Frame	
Model	**Item No.**	**Model**	**Item No.**	**Model**	**Item No.**	**Model**	**Item No.**	**Model**	**Item No.**	**Model**	**Item No.**
MVSI 36-14000	600276	MVSI 36-20000	600201	MVSI 18-19700	601204	MVSI 18-25300	601205	MVSI 12-31000	602142	MVSI 12-45000	602144
MVSI 18-14500	601165	MVSI 18-17600	601166	MVSI 12-14500	602136	MVSI 18-32900	601271	MVSI 12-37000	602143	MVSI 12-55000	602273
MVSI 12-11700	602138	MVSI 12-17600	602092	MVSI 12-20100	602137	MVSI 12-26500	602134	MVSI 12-40000	602244	MVSI 9-49000	602873
MVSI 12-12300	602351	MVSI 12-19100	602093	MVSI 12-24400	602349	MVSI 9-24800	602863	MVSI 9-31000	602871	MVSI 9-57000	602535
MVSI 12-14400	602091	MVSI 9-14400	602827	MVSI 12-29000	602227			MVSI 9-38000	602872		
MVSI 12-15400	602352			MVSI 9-14500	602551						
MVSI 9-9310	602862			MVSI 9-21900	602870						
MVSI 9-11700	602826										

120 Frame	
Model	**Item No.**
MVSI 12-67000	602336
MVSI 9-67100	602589

Electric Vibrator Torque Requirements

Table VI. Vibrator Nut & Screw Torque Requirements

Cap Screws	ft/lb (kgm)
M6	7 (1)
M8	16.5 (2.3)
M10	35 (4.8)
M12	58 (8)
M14	95 (13)
M16	137 (19)
M18	195 (27)
M20	275 (38)

Shaft Nuts	ft/lb (kgm)
M13x1	22 (3)
M15x1	36 (5)
M20x1	72 (10)
M25x1.5	123 (17)
M30x1.5	246 (34)
M45x1.5	360 (50)

Terminal Block Nuts	ft/lb (kgm)
M4	0.87 (0.12)
M5	1.45 (0.20)
M6	2.17 (0.30)
M8	4.70 (0.65)
M10	9.80 (1.35)

Electric Vibrator Dimensions (in./mm)

Table VI. Vibrator Dimensions By Frame

Frame Size	A	B	C	D	E	F	Foot Holes		H	I	L	M	N
							ØG	No.					
00	8.31 (211)	6.02 (153)	4.92 (125)	2.44-2.84 (62-72)	4.17 (106)	0.94 (24)	0.35 (9)	4	2.40 (61)	1.83 (47)	4.06 (103)	3.94 (100)	4.61 (117)
01	9.25 (235)	6.02 (153)	4.92 (125)	2.44-2.84 (62-72)	4.17 (106)	0.94 (24)	0.35 (9)	4	2.40 (61)	2.28 (58)	4.06 (103)	3.94 (100)	4.61 (117)
10	11.83 (301)	7.05 (179)	5.98 (152)	3.54 (90)	4.92 (125)	1.10 (28)	0.51 (13)	4	2.87 (73)	3.03 (77)	5.00 (127)	5.04 (128)	5.55 (141)
20	13.54 (344)	7.99 (203)	6.57 (167)	4.13 (105)	5.51 (140)	1.18 (30)	0.51 (13)	4	3.25 (83)	3.68 (94)	5.71 (145)	5.51 (140)	6.30 (160)
30	15.00 (381)	8.27 (210)	8.07 (205)	4.72 (120)	6.69 (170)	1.77 (45)	0.67 (17)	4	3.60 (91)	3.46 (88)	6.61 (168)	6.30 (160)	6.93 (176)
33	14.21 (361)	8.39 (213)	8.46 (215)	3.94 (100)	7.09 (180)	1.54 (39)	0.67 (17)	4	3.60 (91)	2.56 (65)	6.30 (160)	5.51 (140)	6.89 (175)
35	17.13 (435)	9.17 (233)	8.07 (205)	4.72 (120)	6.69 (170)	2.13 (54)	0.67 (17)	4	4.11 (104)	4.63 (118)	7.36 (187)	6.38 (162)	7.99 (203)
40	19.69 (500)	9.75 (248)	9.06 (230)	5.51 (140)	7.48 (190)	2.13 (54)	0.67 (17)	4	4.57 (116)	5.28 (134)	8.27 (210)	7.09 (180)	8.86 (225)
50	22.36 (568)	9.69 (246)	9.06 (230)	5.51 (140)	7.48 (190)	2.13 (54)	0.67 (17)	4	4.57 (116)	6.61 (168)	8.27 (210)	7.09 (180)	8.86 (225)
60	24.29 (617)	10.94 (278)	10.83 (275)	6.10 (155)	8.86 (225)	2.76 (70)	0.87 (22)	4	5.31 (135)	6.97 (177)	9.37 (238)	8.07 (205)	9.96 (253)
70	26.22 (666)	12.64 (321)	12.20 (310)	6.10 (155)	10.04 (255)	3.03 (77)	0.93 (24)	4	6.18 (157)	7.01 (178)	10.91 (277)	8.46 (215)	11.61 (295)
80	28.74 (730)	13.66 (347)	13.39 (340)	7.09 (180)	11.02 (280)	3.15 (80)	1.02 (26)	4	6.50 (165)	7.87 (200)	12.01 (305)	9.45 (240)	12.60 (320)
90	29.13 (740)	14.57 (370)	15.35 (390)	7.87 (200)	12.60 (320)	3.78 (96)	1.10 (28)	4	7.56 (192)	9.45 (240)	12.99 (330)	10.63 (270)	13.78 (350)
95	34.25 (870)	15.55 (395)	15.43 (392)	7.87 (200)	12.60 (320)	4.13 (105)	1.10 (28)	4	7.56 (192)	10.04 (255)	13.98 (355)	10.63 (270)	14.76 (375)
97	39.45 (1002)	17.17 (436)	18.11 (460)	4.92 (125)	14.96 (380)	1.38 (35)	1.50 (38)	6	8.46 (215)	11.81 (300)	16.30 (414)	12.60 (320)	17.52 (445)
100	42.13 (1070)	17.87 (454)	20.87 (530)	5.51 (140)	17.32 (440)	1.50 (38)	1.73 (44)	6	9.06 (230)	11.02 (280)	17.64 (448)	14.57 (370)	18.39 (467)
105	44.09 (1120)	20.71 (526)	22.44 (570)	5.51 (140)	18.90 (480)	1.61 (41)	1.77 (45)	8**	10.55 (265)	11.02 (280)	19.49 (495)	20.08 (510)	20.31 (516)
110	45.28 (1150)	23.90 (607)	24.02 (610)	5.51 (140)	20.47 (520)	1.50 (38)	1.77 (45)	8**	11.69 (297)	11.71 (297)	21.34 (542)	21.85 (555)	22.91 (582)

*Dimensions given are maximum for each frame size and will vary depending on the rpm of the vibrator.

**105 and 110 frame vibrators have 8 mounting holes (not pictured).

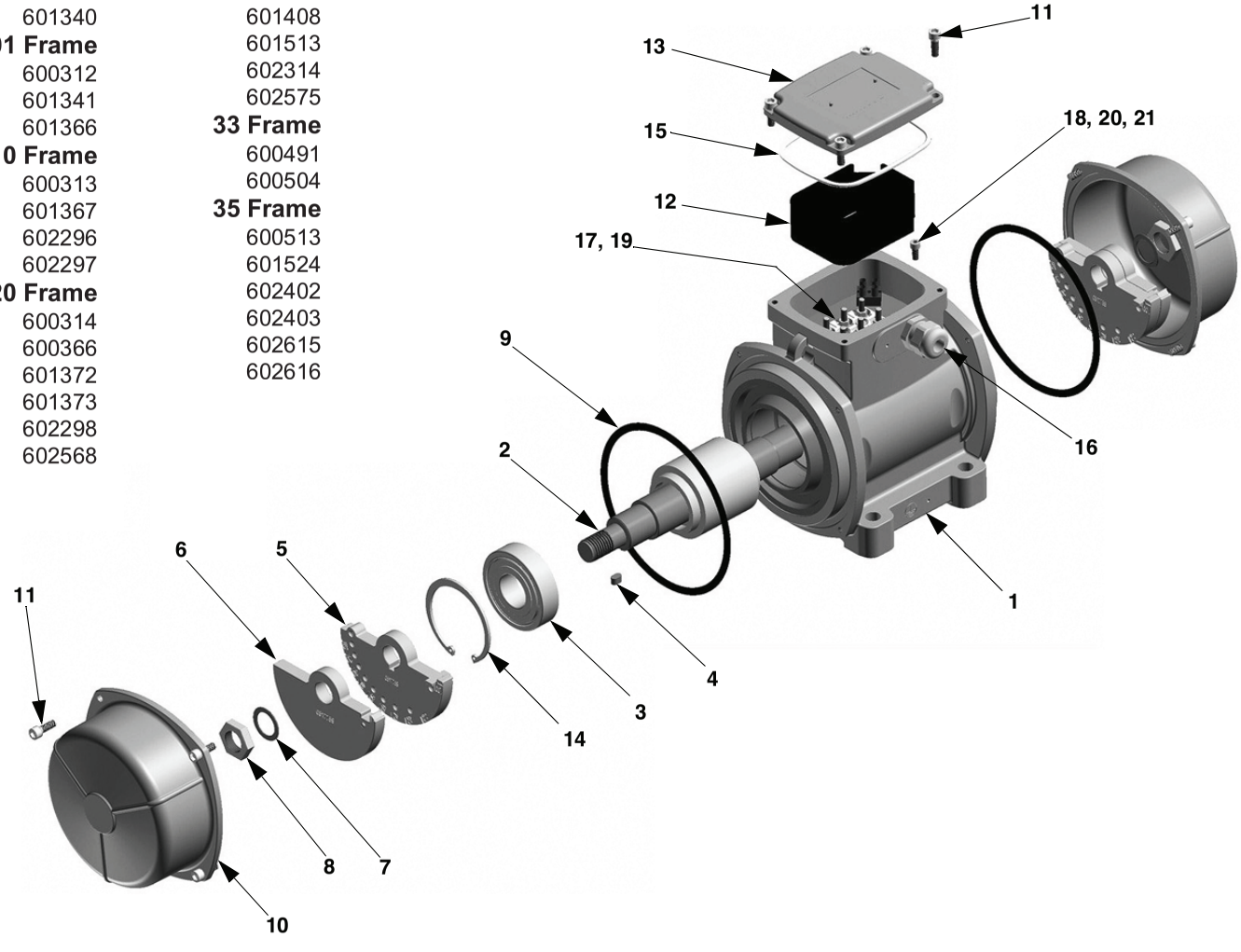
Part# - -Description

1 - -CASE
2 - -STATOR
3 - -BEARING FLANGE
4 - -SCREW
5 - -SCHNORR WASHER
6 - -O-RING
7 - -SHAFT
8 - -FLANGE ADAPTER
9 - -SHAFT WASHER
10 -BEARING
11 -BEARING COVER
12 -SHAFT SEAL
13 -SHFT KEY
14 -FIXED WEIGHT
15 -ADJUSTABLE WEIGHT
16 -SCREW
17 -SCHNORR WASHER
18 -BRASS WASHER
19 -WEIGHT ADJUSTMENT DISC
20 -EXTERNAL SNAP RING
21 -SHAFT NUT
22 -O-RING
23 -WEIGHT COVER
24 -SCREW
25 -SCHNORR WASHER
26 -TERMINAL BLOCK
27 -SCREW
28 -SCHNORR WASHER
29 -GROUND SCREW
30 -SCHNORR WASHER
31 -GROUND LABEL
32 -RUBBER COMPRESSION BLOCK
33 -O-RING
34 -WIRING BOX COVER
35 -SCREW
36 -SCHNORR WASHER
37 -CORD GRIP
38 -GREASE FITTING/PLUG
39 -LEAD PROTECTOR
40 -INTERNAL SNAP RING
41 -SCHNORR WASHER
42 -SHAFT SEAL
45 -FAN
46 -BEARING COVER
47 -SCREW
48 -SCHNORR WASHER
49 -THERMISTOR TERMINAL BLOCK
50 -SCREW
51 -ADAPTER SCREW
52 -PLUG
53 -SCREW
54 -SCHNORR WASHER
55 -SCHNORR WASHER
59 -SPACER
60 -SCREW
61 -WIRING BOX COVER
64 -SCREW
66 -GREASE SEAL RING
67 -SPLIT WEIGHT COVER
71 -SHAFT SEAL
75 -WEIGHT SPACER

Item Numbers;

00 Frame
600311
601340
01 Frame
600312
601341
601366
10 Frame
600313
601367
602296
602297
20 Frame
600314
600366
601372
601373
602298
602568

30 Frame
600381
601408
601513
602314
602575
33 Frame
600491
600504
35 Frame
600513
601524
602402
602403
602615
602616

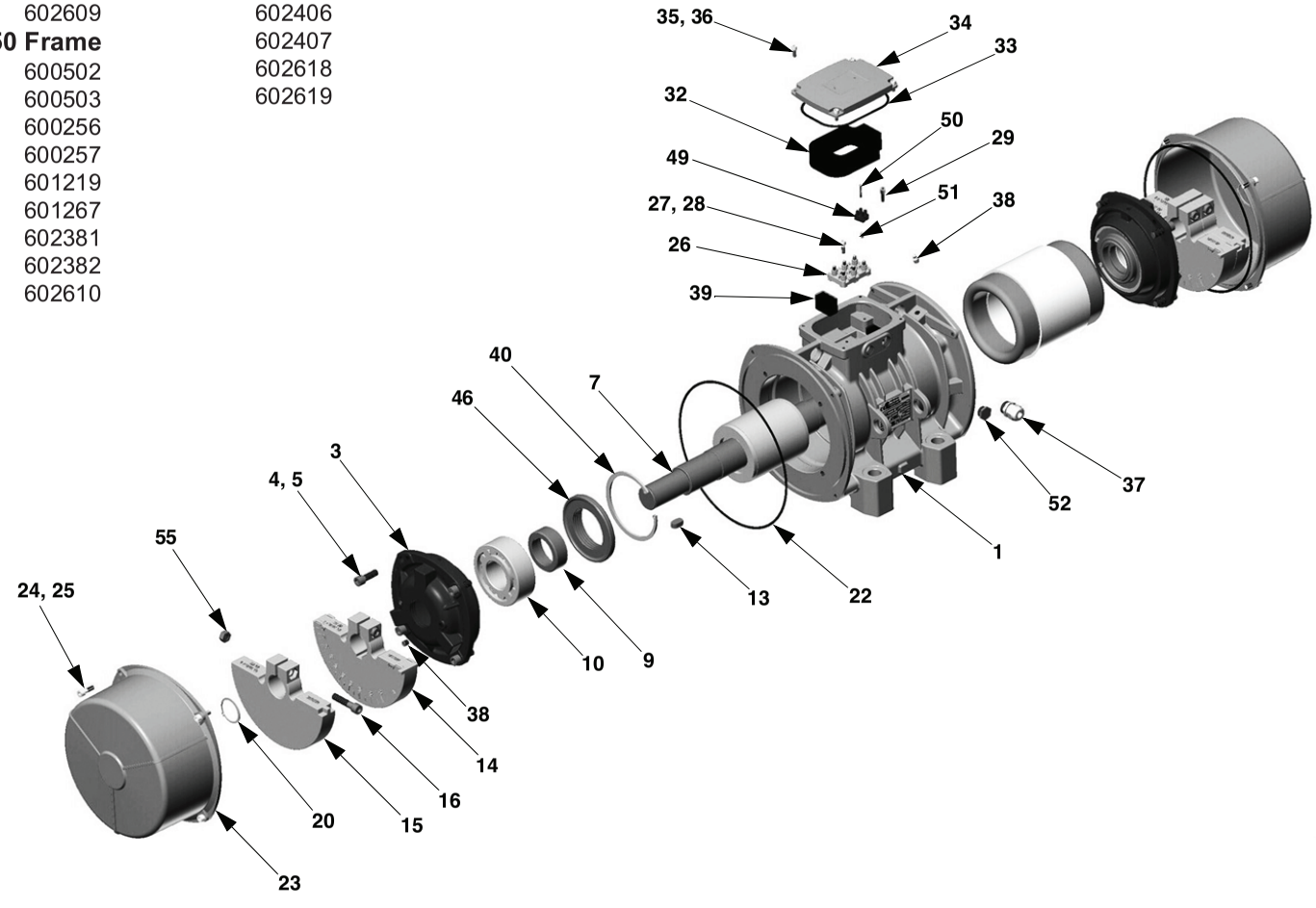


Part# - -Description

1 - -CASE
2 - -STATOR
3 - -BEARING FLANGE
4 - -SCREW
5 - -SCHNORR WASHER
6 - -O-RING
7 - -SHAFT
8 - -FLANGE ADAPTER
9 - -SHAFT WASHER
10 -BEARING
11 -BEARING COVER
12 -SHAFT SEAL
13 -SHFT KEY
14 -FIXED WEIGHT
15 -ADJUSTABLE WEIGHT
16 -SCREW
17 -SCHNORR WASHER
18 -BRASS WASHER
19 -WEIGHT ADJUSTMENT DISC
20 -EXTERNAL SNAP RING
21 -SHAFT NUT
22 -O-RING
23 -WEIGHT COVER
24 -SCREW
25 -SCHNORR WASHER
26 -TERMINAL BLOCK
27 -SCREW
28 -SCHNORR WASHER
29 -GROUND SCREW
30 -SCHNORR WASHER
31 -GROUND LABEL
32 -RUBBER COMPRESSION BLOCK
33 -O-RING
34 -WIRING BOX COVER
35 -SCREW
36 -SCHNORR WASHER
37 -CORD GRIP
38 -GREASE FITTING/PLUG
39 -LEAD PROTECTOR
40 -INTERNAL SNAP RING
41 -SCHNORR WASHER
42 -SHAFT SEAL
45 -FAN
46 -BEARING COVER
47 -SCREW
48 -SCHNORR WASHER
49 -THERMISTOR TERMINAL BLOCK
50 -SCREW
51 -ADAPTER SCREW
52 -PLUG
53 -SCREW
54 -SCHNORR WASHER
55 -SCHNORR WASHER
59 -SPACER
60 -SCREW
61 -WIRING BOX COVER
64 -SCREW
66 -GREASE SEAL RING
67 -SPLIT WEIGHT COVER
71 -SHAFT SEAL
75 -WEIGHT SPACER

Item Numbers;

40 Frame	60 Frame
601217	601220
602380	601268
602609	602406
50 Frame	602407
600502	602618
600503	602619
600256	
600257	
601219	
601267	
602381	
602382	
602610	



Part# - -Description

1 - -CASE
2 - -STATOR
3 - -BEARING FLANGE
4 - -SCREW
5 - -SCHNORR WASHER
6 - -O-RING
7 - -SHAFT
8 - -FLANGE ADAPTER
9 - -SHAFT WASHER
10 -BEARING
11 -BEARING COVER
12 -SHAFT SEAL
13 -SHFT KEY
14 -FIXED WEIGHT
15 -ADJUSTABLE WEIGHT
16 -SCREW
17 -SCHNORR WASHER
18 -BRASS WASHER
19 -WEIGHT ADJUSTMENT DISC
20 -EXTERNAL SNAP RING
21 -SHAFT NUT
22 -O-RING
23 -WEIGHT COVER
24 -SCREW
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26 -TERMINAL BLOCK
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33 -O-RING
34 -WIRING BOX COVER
35 -SCREW
36 -SCHNORR WASHER
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39 -LEAD PROTECTOR
40 -INTERNAL SNAP RING
41 -SCHNORR WASHER
42 -SHAFT SEAL
45 -FAN
46 -BEARING COVER
47 -SCREW
48 -SCHNORR WASHER
49 -THERMISTOR TERMINAL BLOCK
50 -SCREW
51 -ADAPTER SCREW
52 -PLUG
53 -SCREW
54 -SCHNORR WASHER
55 -SCHNORR WASHER
59 -SPACER
60 -SCREW
61 -WIRING BOX COVER
64 -SCREW
66 -GREASE SEAL RING
67 -SPLIT WEIGHT COVER
71 -SHAFT SEAL
75 -WEIGHT SPACER

Item Numbers;

70 Frame
600470
600471
600472
601221
601269
602167
602230
602891

80 Frame
601211
601447
602154
602204
602350
602884
602515

90 Frame
600276
601165
602138
602351
602091
602352
602862
602826

95 Frame
600201
601166
602092
602093
602827

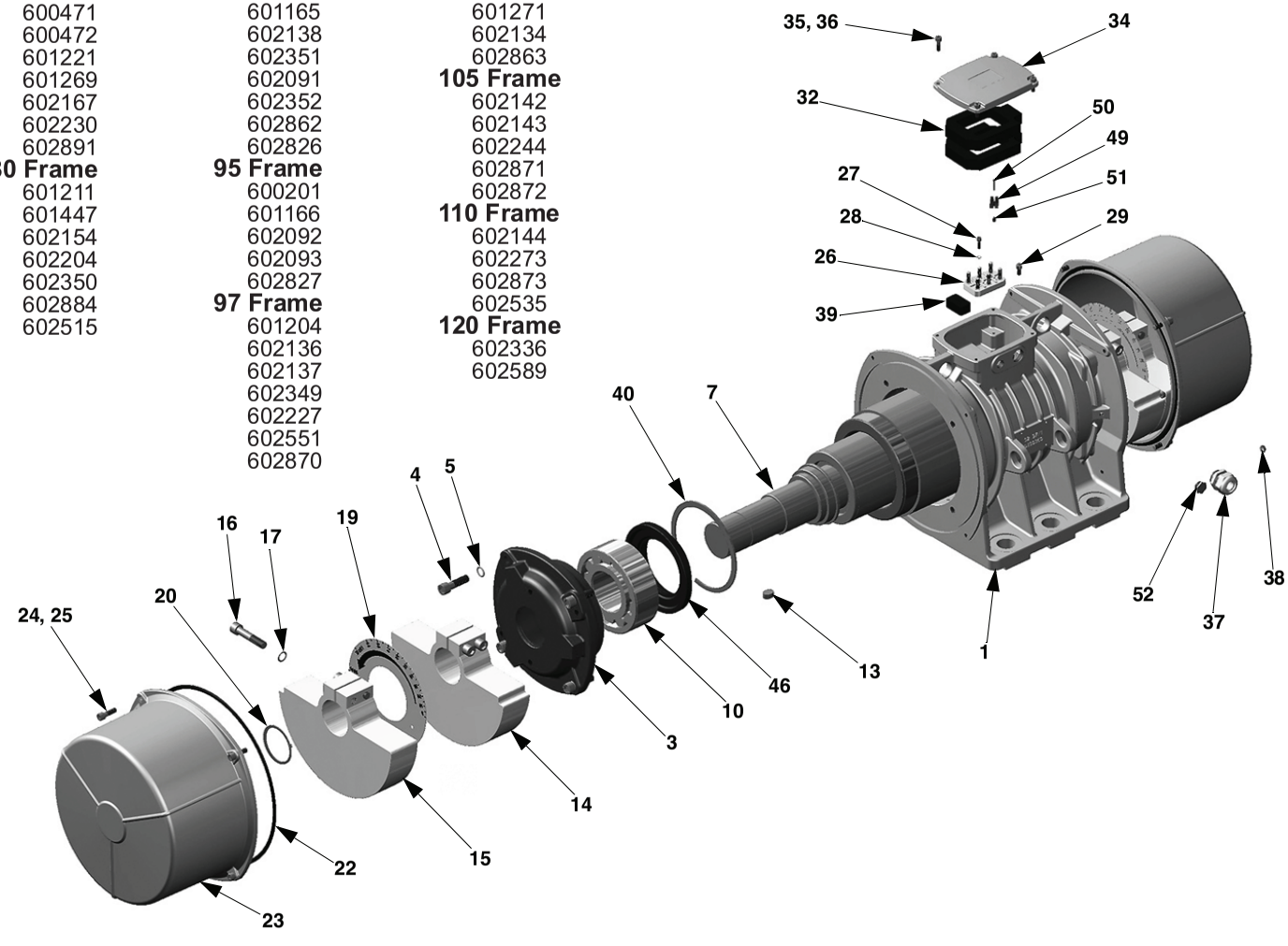
97 Frame
601204
602136
602137
602349
602227
602551
602870

100 Frame
601205
601271
602134
602863

105 Frame
602142
602143
602244
602871
602872

110 Frame
602144
602273
602873
602535

120 Frame
602336
602589



Order Information

When ordering, **please specify** the following:

Vibrator Model _____

Series _____

Serial number _____

Voltage, frequency & number of phases _____

Part#/Description	Quantity Required	Part#/Description	Quantity Required
1 CASE		32 RUBBER COMPRESSION BLOCK	
2 STATOR		33 O-RING	
3 BEARING FLANGE		34 WIRING BOX COVER	
4 SCREW		35 SCREW	
5 SCHNORR WASHER		36 SCHNORR WASHER	
6 O-RING		37 CORD GRIP	
7 SHAFT		38 GREASE FITTING/PLUG	
8 FLANGE ADAPTER		39 LEAD PROTECTOR	
9 SHAFT WASHER		40 INTERNAL SNAP RING	
10 BEARING		41 SCHNORR WASHER	
11 BEARING COVER		42 SHAFT SEAL	
12 SHAFT SEAL		45 FAN	
13 SHFT KEY		46 BEARING COVER	
14 FIXED WEIGHT		47 SCREW	
15 ADJUSTABLE WEIGHT		48 SCHNORR WASHER	
16 SCREW		49 THERMISTOR TERMINAL BLOCK	
17 SCHNORR WASHER		50 SCREW	
18 BRASS WASHER		51 ADAPTER SCREW	
19 WEIGHT ADJUSTMENT DISC		52 PLUG	
20 EXTERNAL SNAP RING		53 SCREW	
21 SHAFT NUT		54 SCHNORR WASHER	
22 O-RING		55 SCHNORR WASHER	
23 WEIGHT COVER		59 SPACER	
24 SCREW		60 SCREW	
25 SCHNORR WASHER		61 WIRING BOX COVER	
26 TERMINAL BLOCK		64 SCREW	
27 SCREW		66 GREASE SEAL RING	
28 SCHNORR WASHER		67 SPLIT WEIGHT COVER	
29 GROUND SCREW		71 SHAFT SEAL	
30 SCHNORR WASHER		75 WEIGHT SPACER	
31 GROUND LABEL			

Fax, Phone or E-Mail to:

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